CLAIMS

What is claimed is:

1	1.	A method of generating contour lines from row and column			
2	data, the method comprising the steps of:				
3		a) selecting a first data point from the row and column data			
4	comprising a first state;				
5		b) comparing a second data point with the first state;			
6		c) determining an existence of a contour line;			
7		d) updating the first state to a next state, if the contour line			
8	exists;				
9		e) creating a portion of a contour line image, if the contour			
10	line exists;				
11		f) proceeding to a next data point; and			
12		g) repeating steps b) through g) for a next column or row.			
1	2.	The method of claim 1 wherein the step of proceeding			
2	comprises p	roceeding in a predetermined direction.			
1	3.	The invention of claim 2 wherein the step of proceeding in a			
2	predetermined direction comprises proceeding in predetermined row and				
3	ctions.				
1	4.	The method of claim 1 further comprising the step of selecting			
2	a contour lin	e interval.			
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1	5.	The method of claim 1 further comprising anti-aliasing the			
2	contour line	image.			
1	6.	The method of claim 1 wherein the step of updating comprises			
2	determining if an elevation point row and column data exceeds a current row				
3	or column ba	ase elevation by a value greater than a contour interval.			

1	7.	The	method of wherein the step of updating comprises storing			
2	the next state in a memory.					
1	8.	The	method of claim 7 wherein the step of storing comprises			
2	d column base elevation.					
1	9.	The	method of claim 1 wherein the step of creating comprises			
2	drawing the	portio	n of the contour line image.			
1	10.	The method of claim 9 wherein the step of drawing comprises				
2	displaying t	he port	ion of the contour line image.			
. 1	11.		method of claim 1 wherein the state of creating and the			
2	step of repe	eating o	omprises creating an entire contour line image.			
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1	12. A method of transforming input elevation data into a real-time					
2	contour plot		, the method comprising the steps of:			
3		a)	selecting an ordering sequence;			
4		b)	selecting a contour line interval;			
5		c)	determining initial row and column base elevation			
6	values;					
7		d)	selecting a first data point;			
8		e)	determining whether a contour line point has been			
9	detected by comparing the row base elevation value or column base					
10	elevation value plus the contour interval to the elevation data;					
11		f)	drawing a portion of a contour plot image;			
12		g)	updating the row and column elevation values to a			
13	highest contour interval multiple less than a elevation data point;					
14		h)	moving to a next data point; and			
15		i)	repeating steps e) through h).			
1	13.	The r	nethod of claim 12 wherein the step of determining initial			
2	row and column base elevation values comprises selecting a contour					
3	·					
3	elevation closest to but not exceeding the first elevation value in the row.					

1	14. The method of claim 12 wherein the step of drawing and the			
2	step of repeating comprises drawing an entire contour line image.			
1	An apparatus for generating contour lines from row and column			
2	data, the apparatus comprising:			
3	a first data point from the row and column data			
4	comprising a first state;			
5	a means for comparing a second data point with the first			
6	state;			
7	a means for determining an existence of a contour line;			
8	a means for updating the first state to a next state, if the			
9	contour line exists;			
10	a means for creating a portion of a contour line image, if			
11	the contour line exists;			
12	a next data point for comparing with the next state by			
13	the means for comparing; and			
14	a means for drawing an entire contour line image from a			
15	plurality of portions of contour line images created by the means for creating.			
1	The apparatus of claim 15 wherein said means for creating			
2	comprises a display.			
1	17. The apparatus of claim 15 further comprising memory for			
2	storing the next state.			
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1	18. The apparatus of claim 15 further comprising a means for anti-			
2	aliasing the entire contour line image.			